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THE DEPARTMENT OF DEFENSE REQUISITION PRIORITY
SYSTEM IMPACT ON THEATER AIRLIFT SUPPORT

by

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A Research Report Submitted to the Faculty

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Preface

As the new century approaches, the U.S. Army will increasingly rely on force projection and airlift to respond to the wide diversity of security challenges that face the United States. Since airlift is a precious resource, we must ensure that it is used wisely. Evidence during the Persian Gulf War suggests that U.S. Army customer units abused the requisition priority system to expedite resupply efforts. The customer's abuse of the priority system dramatically increased the volume of air eligible cargo and backlogged aerial ports of embarkation.

As an Army logistician, I am particularly concerned whether precious airlift assets will be available to support critical "war-stopper" requirements when we need it. The purpose of this study is to determine the factors that contributed to priority system abuse; examine the impact on theater airlift; and review current and emerging technologies for potential solutions to the problem.

A number of organizations and staffs gave generously of their resources and time in support of this effort. First, I wish to thank my faculty advisor, Lt Col Tim Sakulich, for his support and invaluable assistance during this project. I also gratefully acknowledge the cooperation and assistance provided by the staffs at the Air University Library, the U.S. Army Combined Arms Support Command, and the Defense Logistics Studies Information Exchange at Fort Lee, Virginia. This paper would not have been possible without their support.

Abstract

The Persian Gulf War provides one of the most recent, comprehensive examples of cooperative efforts between the U.S. Air Force and U.S. Army to move critical repair parts between theaters of operation. This paper asserts that systemic priority abuse by U.S. Army customer units contributed substantially to the materiel backlogs at the primary aerial ports of embarkation, caused misallocation of critical airlift assets, and needlessly delayed repair parts shipments to supported customers.

The study includes a brief overview of current requisition priority and transportation procedures; provides evidence of priority abuse during the Persian Gulf War; identifies and describes the primary reasons for priority abuse; assesses the impact of priority abuse on theater airlift and efforts to mitigate the problem; and examines current and emerging technologies for potential solutions.

The study concludes that priority abuse resulted from number of interrelated factors including lack of in-transit visibility, inadequate automation/communication architecture, and shortfalls in command supply discipline.

Chapter 1

Introduction

Supply and transport stand or fall together; history depends on both.

—Winston Churchill

Background and Significance of the Study

The Persian Gulf War was a resounding success for U.S. forces and the theater airlift fleet. Still, the operation revealed significant weaknesses in the requisition priority system that may have led to the inefficient allocation of airlift and contributed to transportation delays in delivering critical “war-stopper” supplies to the supported customer.

The requisition priority as defined in Chapter II is assigned by the customer and translates directly to a transportation priority and preferred shipment mode. In other words, higher priority requisitions qualify for premium transportation including airlift. During the Gulf War, customer units assigned the highest priority designator to the majority of requests. This substantially increased the volume of air-eligible cargo and resulted in extensive backlogs at the aerial ports of embarkation. Since shippers could not establish a relative priority among the competing requisitions, cargo was essentially processed on a first-come-first-shipped basis. As the evidence presented in Chapter 5

demonstrates, critical repair part shipments essentially received the same priority as sand bags and duplicating paper.

The Persian Gulf War did not last long enough to accurately assess the impact of priority abuse and shipment delays on unit equipment. While equipment readiness rates remained high, evidence provided in Chapter III suggests that customer units had to resort to scrounging, cannibalization, local purchase, and a variety of other means to keep their equipment operational. In a conflict of longer duration, the shipment delays could have significant ramifications for equipment readiness and mission success.

Statement of the Problem and Thesis

The purpose of this paper is to examine the impact of priority system abuse on theater airlift during the Persian Gulf War. To facilitate that effort, the study includes a number of chapters designed to answer the following questions: (1) Did priority abuse occur during the Persian Gulf War? (2) What were the primary reasons for priority abuse? (3) What was the impact of priority abuse on theater airlift? (4) What initiatives were undertaken to resolve the issue during the Persian Gulf War? (5) What are some potential solutions to the problem?

Limitations and Scope

For brevity, it was necessary to limit the scope of the study. While every service has undoubtedly contributed to priority system abuse, this study is limited to problems noted in the U.S. Army. Second, while priority abuse was prevalent among many classes of supply during the Persian Gulf War, this study is limited to an assessment of Class IX repair parts. The study is further limited to problems associated with inter-theater airlift;

it does not address intra-theater lift. Finally, this study is designed to provide relevant ways to immediately improve theater airlift given current technological constraints. As such, the study is limited to an assessment of current or near-term technologies that could offer potential solutions.

Methodology

The majority of research for this study was conducted at the Air University Library, and included a sizeable contribution of source material from the Defense Logistics Information Exchange (DLSIE), Fort Lee, Virginia. Primary source data was obtained from the Army Center for Lessons Learned and the U.S. Army Combined Arms Support Command via the Internet.

Secondary source data was obtained primarily from the Air University Library and DLSIE. A special fifteen-page bibliography, Persian Gulf War 1990-1991, obtained from the Air University Library provided the start point for secondary research materials. Secondary sources included published articles, documents, and books related to the Persian Gulf War. The secondary sources addressed logistics difficulties including transportation shortages, inadequate automation and communications, lack of in-transit visibility, and shortfalls in supply discipline.

The DLSIE data base was another excellent source of secondary data. These sources detailed many of the same logistics difficulties, but emphasized the U.S. Army perspective. These sources provided quantitative information on the number of repair parts demanded, associated costs, priority code distribution, project code usage, and average order ship time.

Chapter 2

Current DOD Requisition Priority and Transportation Procedures

This chapter includes a brief overview of current DOD Requisition Priority and Transportation Systems. Procedures governing the priority movement of cargo within the Defense Transportation System are delineated in the Uniform Military Movement and Issue Priority System (UMMIPS) and the Military Standard Transportation and Movement Procedures (MILSTAMP).

Uniform Materiel Movement and Issue Priority System (UMMIPS)

The UMMIPS provides the means for expressing the importance of a supply request. Two factors play a part in determining the priority: the Force Activity Designator (FAD) and the Urgency of Need Designator (UND).¹ Each unit in the Army is assigned a FAD based on its relative position on the Department of the Army Master Priority List and the criticality of its mission. The FAD is expressed by Roman numerals I, II, III, IV, V. The UND is used to express how urgently the unit needs the requested supplies. The requesting unit determines the UND and assigns the letter A, B, or C to the requisition.²

Table 1, “Supply Priority Designator Determination”, extracted from Army Field Manual 55-10, demonstrates the relationship between the five FADs, the three UNDs, and the assignment of priority designators. To illustrate, consider a notional FAD III

unit. The Department of the Army assigned the FAD III designator, because the unit must be ready to deploy within 30 days. The FAD III unit may now select Urgency of Need (UND) A, B, or C to express how urgently the item is needed. If the unit is unable to accomplish its mission without the requested item, the unit assigns UND A. As the table demonstrates, the FAD III unit is authorized to use priority designator 03 for UND A requests. The same unit would use priority designator 06 for UND B requests and priority 13 for routine UND C requests.

Table 1. Supply Priority Designator Determination

SUPPLY PRIORITY DESIGNATOR DETERMINATION				
Urgency of Need Designator (UND)				
Force/Activity Designator (FAD)		A Unable to Perform Mission	B Impairing Mission	C Routine
I	Top National Priority	01	04	11
II	Combat Ready	02	05	12
III	Ready to Deploy Within 30 Days	03	06	13
IV	Ready to Deploy Within 90 Days	07	09	14
V	Ready to Deploy After 90 Days	08	10	15

Military Transportation and Movement Procedures (MILSTAMP)

The MILSTAMP system is designed to manage, control and document materiel moving in the Defense Transportation System.³ MILSTAMP is structured to support the priority designators, supply priorities and movement criteria prescribed by UMMIPS.

Transportation priorities (TP) are derived from the priority designator found on all materiel requisitions. Table 2, “Transportation Priority/Movement Conversion Table”, extracted from Joint Publication 4.01, demonstrates the direct relationship between the

priority designator and the transportation priority assigned. As the table shows, the TP also translates to a particular transportation mode. Transportation priority 1 and 2 cargo generally moves by air, while priority 3 cargo moves by surface.

Table 2. Transportation Priority/Movement Conversion Table

TRANSPORTATION PRIORITY/MOVEMENT CONVERSION TABLE					
Supply Designator (+)	Priority	Required Date (=)	Delivery	Transportation Priority (and)	Mode of Shipment
01-08		999 N-- E--		1	Air
01-08				2	Air
01-15				3	Surface

Additional Expedited Handling Procedures

Current requisition and transportation procedures allow for the assignment of additional codes that further delineate the urgency of the request and signal the shipper to expedite handling. These codes include: Not Mission Capable Supply (NMCS) and Anticipated Not Mission Capable Supply (ANMCS); “999” Triple-Nine requisitions; and Project codes.⁴

NMCS requests are used to requisition repair parts needed to return a broken item of equipment to mission capable status. ANMCS requests are used when a unit “predicts” such a situation will occur. In either case, the unit may only submit these requests for the quantity required to return the equipment to mission-capable status. For NMCS conditions requiring expedited handling, units may enter high priority designators 01-03 (depending on the unit’s UND and FAD) and “999” on the requisition. The presence of

the 999 indicates that the requisition will be filled and shipped ahead of all other TP-1 shipments.⁵

Project codes are used to distinguish requisitions and accumulate cost data related to exercises, maneuvers, and other distinct programs. Category D project codes assigned by the Joint Chiefs of Staff further expedite requisition processing by identifying specific materiel requirements that "...will be ranked above all other requisitions with the same priority designator..."⁶ The JCS assigned two project codes during Operation Desert Shield/Desert Storm (ODS/S). The first project code assigned was "9BU" and was established as part of the deployment order to identify and provide expedited service to all Desert Shield TP-1 shipments. The second project code was 9AU and was established to enable CENTCOM activities to clearly articulate NMCS needs and receive premium distribution handling such as dedicated airlift to the AOR.⁷

Summary

This chapter demonstrated the direct relationship between the requisition priority assigned by the customer, the transportation priority assigned, and the preferred mode of shipment. Higher priority requisitions qualify for premium transportation, including airlift. As the number of higher priority requisitions increases, the quantity of air eligible cargo necessarily rises in order to respond to customer requirements.

Notes

¹ DA Pam 710-2-1. *Using Units Supply System*. February 1994, p 2.

² Ibid.

³ Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System*. June 1997, A-1.

⁴ DA Pam 710-2-1. *Using Unit Supply System*. February 1994, p 4.

⁵ Ibid.

⁶ DOD Dir 4500.32R, 1991: B13-3.

Notes

⁷ U.S. Army Cost and Economic Analysis Center. *Supply Class IX Costs of Operations Desert Shield/Desert Storm*. February 1993, p 2-2.

Chapter 3

Requisition Priority Abuse During Operation Desert Shield/Storm

This chapter discusses evidence of priority system abuse during ODS/S. In February 1993, the U.S. Army Cost and Economic Center (USACEAC) published a report focusing on the Class IX repair part expenditures of twelve Army combat units during ODS/S. The objective of the report was to analyze ODS/S data to better understand the magnitude and mix of demands placed on the supply system. The report provided insight into repair part consumption rates, repair part costs, high priority requisitions, project code usage, and order ship time.

Repair Part Consumption Rates

The USACEAC report determined that Army-wide demand for Class IX repair parts increased significantly during ODS/S. The study could not determine whether the increase was due to environmental problems, accelerated operating tempo (OPTEMPO), or as a result of abuse, but it did obtain some significant data. Demand for tank engines for the 24th Infantry Division (Mech) increased by 256% over the Army average for the previous fiscal year. Costs for tires and tubes jumped 179%.¹

While the environment and OPTEMPO may have contributed to increased consumption, most studies in the literature offered alternative explanations, including the

lack of asset and in-transit visibility. A study conducted at the U.S. Army War College linked the in-transit visibility problem to increased consumption indicating that “...logisticians without data and asset visibility were unable to respond to high priority customer requirements. This resulted in increased requisitioning, priority abuse, hoarding, scrounging, and excessive local purchases by customers needing supplies.”²

Repair Part Costs

To determine the Class IX costs of the war from build-up to cease-fire, the USAEAC aggregated data from the Logistics Intelligence File (LIF). The USACEAC used the project codes assigned during ODS/S to identify Class IX costs related to the operation. Based on their analysis, the Army spent \$2.85 billion on Class IX repair parts that were directly attributable to ODS/S through the use of special project codes.³

What could account for such dramatic expenditures? Once again, most studies attributed the problem to asset and in-transit visibility. The Logistics Intelligence File (LIF), a central repository for requisition historical data, was often the only asset visibility tool available to most units. As a result, “lack of a record in the historical file was often sufficient to cause initiation of redundant requests....”⁴ Other studies attributed the problem to automation deficiencies and transmission delays citing that “the transmission of requisitions from the company level to the wholesale system averaged between 5 and 15 days.”⁵ When units considered the response time inadequate, they reordered the part. This resulted in duplicate and sometimes triplicate requisitions for the same requirements. Still other studies attributed the problem to lack of fiscal responsibility. One study, conducted from the perspective of a U.S. Army divisional unit, revealed that “as units within the division saw how effective and responsive the supply

system became, *unconstrained by any budget considerations*, their appetite for supplies of all types grew, and the volume of supply into the division became staggering.”⁶ A study conducted by the General Accounting Office reached similar conclusions...”*because there were no budgetary constraints* on Desert Shield/Storm, and units were preparing to conduct their wartime missions, the use of the high priority code was widespread.”⁷

Operation Desert Shield/Storm Project Code Usage

The USACEAC also conducted an analysis of ODS/S project code usage. The report attributed 63% of ODS/S costs to special project code 9BU - a joint project code used by all services. Other project codes including 9AU (established by the JCS for dedicated air movement), accounted for 15% of the cost. The remainder of the cost was attributed to project code “FAR”, which was established by Department of the Army to identify costs associated with replenishment of supplies that were depleted during ODS/S.⁸

The project code distribution presented in the USACEAC report was not revealing in itself. After all, the project codes under analysis were authorized for use throughout ODS/S. Review of the existing literature, however, disclosed recurring patterns of abuse.

A study conducted by the Office Chief of Staff Logistics (DCSLOG) related the experiences of the Logistics Control Activity (LCA). During ODS/S, the Logistics Control Activity was responsible for clearing air eligible cargo. The LCA made periodic checks of the LIF database for evidence of priority abuse involving Desert Express priority code 9AU. The agency found a host of violations including: “crates of sandbags listed as Class IX aviation parts, tents construction materials, administrative supplies” and many other items requisitioned under priority code 9BU/999 and 9AU.⁹ One study

estimated that “as many as 90 percent of requisitions received for clearance were marked 9BU/999 or 9AU” - the top two priority codes for air movement.¹⁰

Percent High Priority Requisitions

The USACEAC report concluded that the mix of demand priorities for Class IX repair parts changed dramatically during ODS/S. The assessment of priority designator (PD) usage for Class IX before and after ODS/S revealed a significant shift in percentages for High (PD 01-03), Intermediate (PD 04-08), and Routine (PD 09-15) requests. The percentage of high priority requests more than doubled from 15% to 32%; intermediate priority requests increased from 13% to 22%; while routine requests decreased from 72% to 46% - about half the peacetime average.¹¹

The existing literature was replete with examples of real or perceived priority abuse during ODS/S. The most convincing evidence appeared in the literature published by the U.S. Transportation Command (USTRANSCOM). “One of USTRANSCOM’s most intractable and high visibility problems during ODS/S was a backlog of sustainment cargo at aerial ports of embarkation, primarily in the United States. The cause was two-fold: the transportation customer’s abuse of the priority system and an airfleet not large enough to carry both air-eligible unit cargo and air-eligible sustainment cargo.”¹²

Order Ship Time (OST) Performance

The USACEAC used the Standard Delivery Date (SDD) as the analysis measure for the ODS/S Order Ship Time (OST).¹³ Department of the Army Pamphlet (DA Pam) 710-2-1 defines the SDD as “...the latest calendar date that the requesting unit can normally

expect to receive the item.” The SDD is determined by the priority designator and the requesting unit’s location.

From July 1990 through June 1991, the 12 deployed units in the analysis placed more than 1,000,000 demands on the Army’s supply system.¹⁴ The volume of Class IX requisitions stressed the supply system, resulting in backlog to the requestor. The report’s analysis of the OST in relation to priority designators (PD) bears this out. The average OST for ODS/S was 21 days across all priority designators. This varied throughout the ODS/S period. After the initial flood of requisitions, the time increased to an average of 32 days. This 32-day period exceeded the Standard Delivery Date by an average of 18 days for requisitions with PD 01-03 and 14 days for requisitions with PD 04-08.¹⁵

Studies in the literature review assessed the impact of shipment delays on customer units...”commanders became impatient. The order to ship time averaged 10 days for high priority Class IX. Divisions began to order three to five times their authorized stockage level guarding against zero balance on critical repair parts.”¹⁶

Summary

The USACEAC report focused on Class IX repair part costs to support the operations of 12 combat units during ODS/S. The supply system became stressed under the enormous demand placed upon it, as reflected by the increased high priority demands. The literature review disclosed a number of problems that contributed to the rise in high priority requests including lack of command discipline, priority and project code abuse, poor asset and in-transit visibility, and non-responsive automation systems.

Notes

¹ U.S. Army Cost and Economic Analysis Center Memorandum, Subject: *Report of Supply Class IX Costs of Operations Desert Shield/Storm*, February 1993.

² Ebertowski, James S. *Container Management Within the Total Distribution System - The Desert Storm Model*. April 1992, pg23.

³ U.S. Army Cost and Economic Analysis Center. *Supply Class IX Costs of Operations Desert Shield/Desert Storm*. February 1993, pg2-6.

⁴ Gustafson, Greg R. *Logistics Management Systems in Desert Shield/Desert Storm How Well Did They Do?* April 1992, pg18.

⁵ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. 1991, pg94.

⁶ Stevenson, Mitchell H. *Desert Shield/Storm Logistics*. April 1993, pg14.

⁷ General Accounting Office. *Desert Shield/Storm Logistics Observations by U.S. Military Personnel*. November 1991, pg32.

⁸ U.S. Army Cost and Economic Analysis Center. *Supply Class IX Costs of Operations Desert Shield/Desert Storm*. February 1993, pg2-2.

⁹ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. 1991, p G-5.

¹⁰ Ibid, p G-7.

¹¹ U.S. Army Cost and Economic Analysis Center Memorandum, Subject: *Report on Supply Class IX Costs of Operation Desert Shield/Storm*, February 1993.

¹² Mathews, James K. and Holt, Cora J. *So Many, So Much, So Far, So Fast*. p 84.

¹³ U.S. Army Cost and Economic Analysis Center. *Supply Class IX Costs of Operations Desert Shield/Desert Storm*. February 1993, p 2-15.

¹⁴ Ibid, 2-13.

¹⁵ Ibid, 2-16.

¹⁶ Battino, Eric P. *Receipt, Storage, and Issue of Class IX at Theater Level Under Rapid Deployment Conditions for Contingency Operations*. April 1995, p 14.

Chapter 4

Contributing Factors To Priority System Abuse During Operation Desert Shield/Storm

The previous chapter supported the assertion that priority and supply system abuse occurred during ODS/S. The abuse was caused by a number of interrelated factors including lack of asset and in-transit visibility, incompatible supply automation/communication systems, and inadequate command supply discipline.

Asset and In-Transit Visibility

During ODS/S, theater logisticians lacked current data and asset visibility, which substantially reduced their ability to prioritize and redirect cargo. The supply system became backlogged and inefficient, creating uncertainty among supported customers. To ensure receipt of a requested item, many customers resorted to multiple requisitions for like-items, priority abuse, hoarding, scrounging, and excessive local purchases...”there were so many requests in the system for the same requirements (sometimes from the same organization)...that the National Inventory Control Points (NICPs) started to cancel them indiscriminately.”¹

Another in-transit visibility problem resulted from excessive reliance on the Logistics Intelligence File (LIF). During ODS/S, customers and logistics managers used the LIF to maintain visibility of Class IX repair parts as they moved through the supply system. Pertinent data was often not available in the LIF due to insufficient input from

the activities responsible for moving the supplies throughout the pipeline. The LIF was never designed a real-time status system, but lack of a record in the historical database was often sufficient justification for units to initiate a redundant request for the same requirement.²

One additional problem related to asset visibility was the customer's practice of "off-line" requisitioning. During ODS/S, customer units resorted to a variety of non-standard methods to expedite urgent supply requests, including telephones, facsimile, and messages to higher level supply sources. When the customer units bypassed the supporting Supply Support Activity (SSA), any means of establishing asset visibility was lost. Instead of expediting the process, the request was often delayed due to manager intervention.³

Logistics Automation Architecture

At the outbreak of hostilities, the U.S. Army was transitioning from old methods of manual requisitioning to new hardware and software systems designed to process requests by means of electronic data transfer. The result was a substantial mix of logistics automation architecture deployed to the theater ranging in capability from batch processing to interactive processing. At least twenty-six separate stovepipe databases were operational in theater.⁴

Units experienced myriad problems with automation and associated communications throughout the deployment. Some units deployed without computer systems because they questioned the utility of the systems in a combat environment. Others deployed well in advance of their unit equipment and could not find their computers upon arrival. The lack of tactical communications support for electronic transfer of data caused additional

problems. CSS units below division level had to hand carry supply transactions on floppy disk or magnetic tape to the higher source of supply. This degraded the real time capability of even the most sophisticated supply systems, including the newly fielded Standard Army Retail Supply System Objective (SARSS-O).⁵

The sheer volume of requisitions submitted during ODS/S overloaded the transaction capacity of the logistics automation systems, resulting in long computer run times, processing backlogs, and hard disk saturation. The transmission of requisitions from company level to the wholesale system averaged between five and fifteen days.⁶ The processing delays undermined customer's confidence in the automated system and contributed to supply system abuse

Many of the shortfalls identified with in-transit visibility were also the result of faulty automation architecture. The lack of interconnectivity between supply and transportation systems meant units had little direct contact with supplies en route via air and sea lines of communications.⁷ Transportation control documents were prepared by hand, causing units at the receiving ports of debarkation to open and sort every container/pallet to determine its contents. Data transcribed to the control documents was often insufficient to ensure throughput of the supplies to the ultimate destination. Since customers could not locate critical items in the pipeline, they generated duplicate and triplicate requisitions for the same requirements.

Command Supply Discipline

The term "command supply discipline" refers to the unit commander's regulatory obligation to enforce proper supply discipline within the unit. Commanders enforce supply discipline through a combination of leadership, command emphasis, and training.

DA Pam 710-2-1 delineates the commander's responsibility for supply discipline in the assignment of priority designators specifying that "commanders are responsible for the accurate assignment of priority designators. The commander must personally review or delegate in writing personnel with the authority to review all UND A and UND B requisitions."⁸ The commander or designated representative reviews the supply request before submitting to the supply system to ensure the item is authorized; that the quantity ordered is the actual amount needed; and that the need for the item corresponds to the Priority Designator assigned.

The literature review provided numerous accounts of priority designator abuse and inadequate command supply discipline during the Persian Gulf War. Units determined their own UND and assigned higher than required priority to requisitions. As the office of the DCSLOG reported, "the procedures for assigning priorities to requisitions were abused by units. In supply Class IX alone, high priority (issue priority 01-08) requisitions averaged between 65 and 85% of total requisitions submitted to the wholesale system on a daily basis."⁹

Summary

This chapter described the primary contributing factors to priority system abuse during ODS/S including lack of asset and in-transit visibility, incompatible supply automation/communication systems, and inadequate command supply discipline. Potential solutions to priority system abuse must consider each of the factors noted above to fully resolve the problem.

Notes

¹ 1st Corps Support Command After Action Report, Fort Bragg, undated, p 11-13.

² Gustafson, Greg R. *Logistics Management Systems in Desert Shield/Desert Storm How Well Did They Do?* April 1992, p 18.

³ Ibid, p 19.

⁴ Ibid, p 12.

⁵ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment. Undated, p 94.*

⁶ Office of the Deputy Chief of Staff Logistics, *Operation Desert Storm Sustainment. Undated, p 94.*

⁷ Bilyeu, Barbara. *An Analysis of the Causes of the Physical Distribution Problem the Army Experienced at the Ports of Embarkation During Operation Desert Shield/Desert Storm.* November 1992, p17.

⁸ DA Pam 710-2-1. *Using Unit Supply System.* February 1994, p 4.

⁹ Bilyeu, Bargara. *An Analysis of the Causes of the Physical Distribution Problem the Army Experienced at the Ports of Embarkation During Operation Desert Shield/Desert Storm.* November 1992, p19.

Chapter 5

Impact of Priority Abuse on Theater Airlift Assets

Unit cargo and sustainment backlogs started to accumulate at the primary Aerial Ports of Embarkation (APOE) as early as September 1990.¹ The table below shows the average daily backlog per month at Dover Air Force Base (AFB), Delaware, and Tinker AFB, Oklahoma - the two primary APOEs for cargo during ODS/S. The table was created from a report entitled *Desert Express: Framework for Institutionalizing Express Airlift Procedures*, and reflects data collected by the Military Airlift Command (MAC) during ODS/S.

Table 3. Aerial Port of Embarkation Backlogs²

AERIAL PORT OF EMBARKATION 9BU CARGO BACKLOGS (Mean Daily Backlog in Tons)		
	Dover AFB	Tinker AFB
September	482.3	146.2
October	336.0	729.6
November	729.6	414.0
December	1957.1	1373.4
January	2249.2	1171.5
February	1488.7	723.6
March	842.1	323.7

The backlog accumulated in September was particularly significant in that only half of the total force was deployed to the Persian Gulf region at that time. Within two weeks of the deployment over 90 percent of the Military Airlift Command operable C-5s and

95% of the operable C-141s were already committed to the cargo clearance effort.³ The Civil Reserve Air Fleet - Stage I (CRAF I), designed to provide civilian aircraft to augment military assets, was also fully committed.

During the months of December 1990 and January 1991, the backlog at the APOEs rose dramatically. The increase was due to the rapid accumulation of both sustainment materiel and unit cargo needed to deploy second phase forces and equipment to the Persian Gulf region. Even the activation of the CRAF Stage II on D-Day, 17 January 1991, could not fully resolve the problem.⁴ By January 21, 1991..."the sustainment backlog had reached over 6,700 tons or roughly 100 C-5 equivalents."⁵

What caused the tremendous backlogs at the aerial ports of embarkation? One study published by the Deputy Chief of Staff for Logistics (DCSLOG) offered a variety of explanations including: the sheer volume of cargo entering the ports; lack of adequate documentation to determine the contents of the pallets; inadequate personnel to operate the ports; mixed pallet configurations resulting from the number of SSAs in theater; and the failure of units to provide DODAAC changes resulting from unit moves.⁶ Still, none of these explanations address the fundamental reasons for the increased volume.

What increased the volume of air eligible cargo? The DCSLOG study, *Operation Desert Storm Sustainment*, offers the most likely explanation for the problem..."the procedures for assigning priorities to requisitions were abused by units."⁷

Summary

Abuse of the priority system during ODS/S had a direct and immediate impact on airlift. As discussed in Chapter II—Current Requisition and Transportation Procedures, the priority designator and urgency of need translate directly to a transportation priority.

As units coded additional requests as high priority, more cargo was identified for the air mode of transportation. A report conducted by the GAO summed up the result...”at both airports and seaports, troops and cargo were often loaded on a first-in, first-out basis, regardless of their relative priorities for arriving in theater...items such as rations, publications, and sundries were handled in the same manner...as Army aviation spare parts”.⁸

Notes

¹ Basham, Terry D. *Desert Express: Framework for Institutionalization of Express Airlift Procedures*. September 1992, p 24.

² Ibid.

³ Ibid, p 25.

⁴ Mathews, James K. and Holt, Cora J. *So Many, So Much, So Far, So Fast*. p 86.

⁵ Ibid.

⁶ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. Undated, p51.

⁷ General Accounting Office. *Desert Shield/Storm Logistics U.S. Transportation Command's Support of Operations*. January 1992, p 7.

⁸ Ibid.

Chapter 6

Efforts to Mitigate Priority Abuse

USTRANSCOM and USCENTCOM undertook a number of initiatives during ODS/S to curtail the rising backlogs and improve customer service. The primary initiatives included supplemental guidance for logistics, airlift allocation and diversion teams, and an express air delivery system for “war-stopper” materiel.

Supplemental Logistics Guidance

Cognizant of rising backlogs, USCENTCOM issued supplemental logistics guidance to unified commands and services in mid-November 1990: “Move 90 percent of sustainment by sea and 10 percent by air, except Class IX repair parts which will move 10 percent by sea and 90 percent by air.”¹ The objective was to clear the APOEs of sustainment backlog so critical lift assets could support higher priority unit moves during the phase two deployment of Desert Storm.

USCENTCOM’s guidance was largely ineffective in stemming both the quantity and composition of materiel delivered to the APOEs for air transport. During the first week of December, depots were still receiving “bulk quantities of sand bags, fence posts, toilet paper, T-shirts, mittens, sweat shirts, and administrative supplies” for air delivery. Over half of the Army’s sustainment cargo was coded “required delivery date” (RDD) “999” - the highest priority.²

Airlift Allocation and Diversion Teams

The next initiative to resolve the backlog problem was the allocation of existing lift. A Joint Transportation Board met in December 1990 in Washington and assigned each service a quota for the tonnage they could bring to the APOE. The Army's allocation was 425 tons per day.³ USCENTCOM sent diversion teams to the primary APOEs at Dover AFB and Tinker AFB to supervise the effort. The diversion teams were comprised of representatives from each service. Their mission was to accurately prioritize cargo on hand and challenge the priority of cargo entering the APOE. Cargo that did not meet the criteria for air was redirected for sea shipment.

The diversion team concept met with varying degrees of success. Initially, the response was positive "within days of arrival at Dover, members directed 1,300 tons of rations for sealift which was roughly equivalent to 63 C-141 missions."⁴ But, the initial success did not last long. As unit cargo arrived to support the second phase of the ODS/S buildup, the backlogs continued to rise. The Army allocation for strategic airlift consistently fell short of requirements as evidenced by a study conducted by the DCSLOG. "Army Airlift Clearance Authorities (ACA)...were overwhelmed with air cargo and gave clearance on what amounted to a first-come-first cleared basis. The result was that the Army sustainment airlift allocation was generally filled a few hours after ACA began taking phone calls each day."⁵

Desert Express

The preceding initiatives failed to resolve the APOE backlog problem and customers started to feel the pinch. Acting on a request by Army Aviation Systems Command

(AVSCOM) for an expedited freight service, USTRANSCOM created the “Desert Express” and assigned a new project code “9AU” to go with it.⁶

The Desert Express was a special delivery system patterned after the commercial transport services like Federal Express. Like Federal Express, the service provided “overnight” delivery of critical repair parts and other “war-stopper” cargo. The Desert Express system was built around one C-141 mission from Charleston, South Carolina to the Persian Gulf.⁷ Since the system was limited to one aircraft, one APOE/APOD, and worked in pounds instead of tons, Desert Express cargo also enjoyed greater in-transit visibility. The Desert Express started operating on October 30, 1990.⁸ The U.S. Army was the largest user among the services with 171.4 tons in November, 229.3 tons in December and 266.2 tons in January.⁹

The Desert Express system received excellent reviews from the field...”Army aviation had reached historical readiness rates—thanks largely to Desert Express.”¹⁰ The improved customer satisfaction came at a cost, however. To ensure consistent delivery, MAC dedicated backup aircraft to the mission at several bases along the route. The backup aircraft were not used to capacity, in effect contributing to additional backlog problems at the primary APOEs..¹¹ USTRANSCOM also discovered that the Desert Express was just as vulnerable to priority abuse as the rest of the ALOC.¹²

Summary

In the end, all three initiatives including supplementary logistics guidance; airlift allocation and diversion teams; and Desert Express failed to provide a long-term solution for the APOE backlog problem. None of them adequately addressed the underlying reasons for the increased volume of air eligible cargo - requisition priority abuse.

Notes

¹ Mathews, James K. and Holt, Cora J. *So Many, So Much, So Far, So Fast*. p 85.

² Ibid.

³ Ibid, p 86.

⁴ Ibid, p 86.

⁵ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. Undated, p 59.

⁶ Mathews, James K, and Holt, Cora J. *So Many, So Much, So Far, So Fast*. p 59.

⁷ Menorchik, Douglas. *Powerlift-Getting to Desert Storm*. Praeger Publishers, Westport CT, 1993. P 144.

⁸ Ibid.

⁹ Ibid.

¹⁰ Mathews, James K. and Holt, Cora J. *So Many, So Much, So Far, So Fast*. p 60.

¹¹ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. Undated, p G-7.

¹² Mathews, James K. and Holt, Cora J. *So Many, So Much, So Far, So Fast*. p 60.

Chapter 7

Potential Solutions

This portion of study was designed to examine alternative solutions to the requisition priority abuse problem. First, the study looks at the Global Transportation Network (GTN) to establish whether it addresses the primary causes for priority abuse: the lack of in-transit visibility, insufficient automation/communications architecture, and inadequate command supply discipline. Second, the study looks at the use of parameter controls within the Standard Army Retail Supply System—Objective (SARSS-O) for potential solutions to the requisition priority abuse problem.

The Global Transportation Network

The GTN is an emerging automated command and control information system designed to support DOD transportation users and providers. When fielded, the system will collect and integrate cargo, carrier, and movement information from a variety of transportation systems and make it available to the National Command Authority, CINCs, USTRANSCOM, the Services, and other DOD customers to support logistics planning, tracking, and decision making. The GTN will give users the ability to locate items in-transit, confirm requisition movement, determine container and pallet contents, forecast port workload, and obtain current aircraft and ship schedules.¹

The Persian Gulf War certainly highlighted the need for integrated transportation information. Indeed, one of the most significant problems that contributed to priority system abuse during the war was the lack of in-transit visibility by customer units. Once cargo was loaded on a lift asset, visibility was lost until the items were accounted for at the receiving end. The customers in the field could not locate critical items in the pipeline, so they submitted duplicate (and sometimes triplicate) requisitions for the same requirement. Precious airlift was used to move the extra items that could have been used more efficiently for something else.² In-transit visibility, the primary benefit of GTN, would appear to resolve one of the most significant problems associated with priority system abuse. Unfortunately, GTN has some major limitations.

The GTN was only designed to track passengers and cargo from CONUS (or point of origin) to the theater port of debarkation (POD). Once units move from the theater, GTN loses POD visibility.³ This is a significant shortfall in terms of resolving the priority abuse problem. While every logistician needs information concerning the location of repair parts in the distribution system, none of them match the importance of the supported customer in preventing priority abuse

Another significant problem that contributed to priority system abuse during ODS/S was inadequate automation/communications architecture. How well does the Global Transportation Network (GTN) address this issue? To help answer the question, a brief overview of the U.S. Army's current automation architecture is in order.

The Standard Army Retail Supply System (SARSS) is a multi-echelon supply management and stock control system designed to operate in tactical and garrison environments. It operates at every level of supply, from the DSU/General Support Unit

(GSU) through the theater Army in a theater of operations. The system consists of SARSS-1, 2A, and 2B which are subsets of the entire SARRS system.⁴

The SARSS system interfaces with a number of unit level logistics systems (ULLS) for ground (ULLS-G); aviation (ULLS-A); and unit supply (ULLS-S4). It also interfaces with the Standard Army Maintenance System (SAMS-1) used by direct support maintenance personnel. The SAMS-1 is used to track work orders and submit direct support level supply requests to complete maintenance work orders.

The figure below illustrates the basic relationship between GTN and the current U.S. Army supply automation architecture—the Standard Army Retail Supply System.

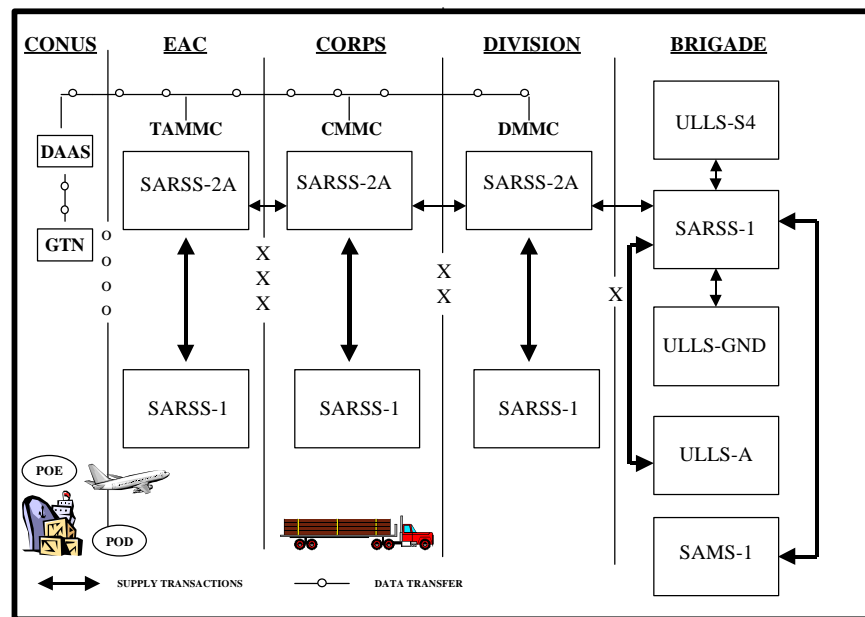


Figure 1. Standard Army Retail Supply System

The Defense Automated Addressing System (DAAS) provides status and tracking of all DOD supply requests from requisition to delivery at destination.⁵ The GTN will interface with DAAS to provide transportation information concerning the requisition.

The GTN automation architecture will maintain visibility of DOD cargo between ports of embarkation and PODs, passing that information via DAAS to customer units.

While the GTN automation architecture appears promising in improving in-transit visibility from the POE to POD, it does little to improve the problems associated with in-theater automation architecture that also contributed to priority system abuse. The current automation architecture depicted at figure 1 remains virtually unchanged since the Persian Gulf War.

The communications architecture necessary to link the in-theater automation system also remains inadequate. Many of the same problems experienced by customer units during the Persian Gulf War are still prevalent today. Reports from the National Training Center and Joint Readiness Training Center indicate that communications are unreliable, difficult to set up, and are not conducive to frequent unit moves experienced at division level and below.⁶ Units continue to hand-carry transaction diskettes from one level of supply to the other, costing precious requisition processing time.

The operational problems described above may limit the ability of GTN to address the third primary cause for priority system abuse—command supply discipline. To restore command supply discipline, customers need asset visibility from “factory to foxhole.” In addition, customers need adequate automation/communications architecture that will transmit the data reliably in a tactical environment. The GTN alone does not appear to address all of these problems.

Parameter Controls

Parameter controls may offer another near-term solution to the priority abuse problem. A parameter is defined as “a measurable, limiting, or restrictive factor that

helps define a system and its behavior.”⁷ The Standard Army Retail Supply System architecture includes such limiting or restrictive factors to help materiel managers enforce proper documentation procedures. Some parameters help identify the customer unit and its relative priority in the supply hierarchy such as Department of Defense Activity Address Codes (DODAAC) and FAD parameters. The FAD was discussed extensively in Chapter II. The DODAAC is a unique serial number assigned to each unit’s stock record account. The DODAAC is assigned by the Logistics Support Activity (LOGSA) and allows the supply system to identify the unit that has requested materiel.⁸ Other parameters, such as “maximum dollar value” and “maximum quantity ordered”, facilitate managerial review for requisitions exceeding the standards set by the system.⁹

The figure on the following page once again illustrates the current Standard Army Retail Supply System. Figure 2, however, includes a recent modification called “Objective Supply Capability (OSC) that improves visibility and lateral issue capability of assets among customer units.

The advantage of OSC is the ability to locate and redistribute assets in-theater without sending the customer request to a higher-level supply source. The OSC allows a unit PLL clerk to go directly to the source of supply to satisfy their requirements. A “gateway” provides both a retail asset review and a subsequent wholesale asset review of a Class IX requisition. The unit PLL then receives a message identifying which activity in the theater will supply the asset. The losing unit receives a referral message to fill the request.¹⁰

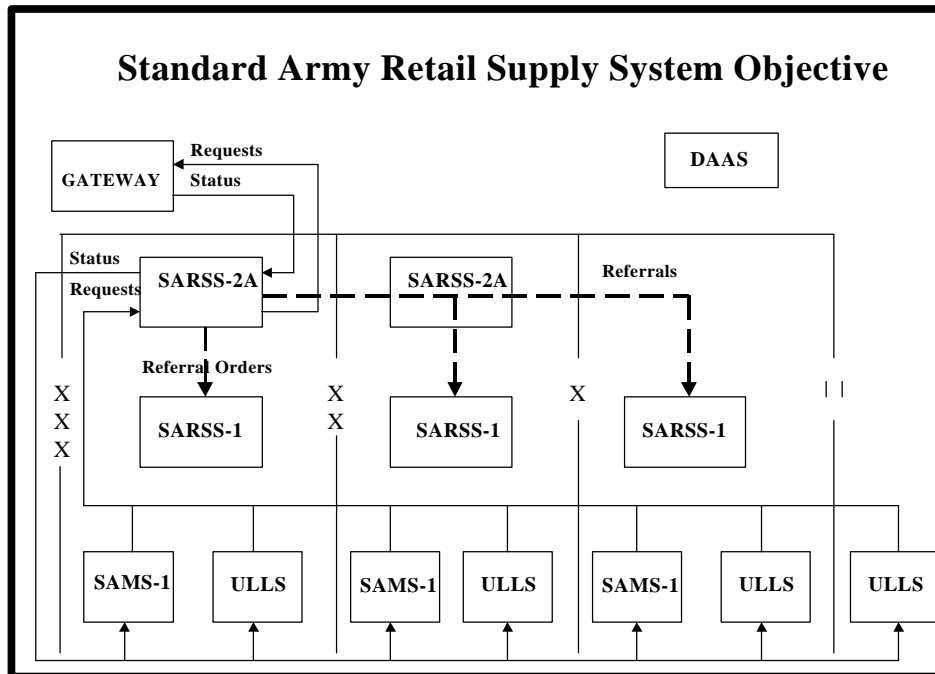


Figure 2. SARSS with Objective Supply Capability

The OSC could significantly reduce order ship time; restore confidence in the supply system; and reduce priority system abuse. However, it has some limitations.

First, only units resident on the same SARSS-2A computer have lateral visibility of each other's assets. The SARSS-2A computer is located at the Division, Corps and EAC Materiel Management Centers (MMC). The SARSS-2A accomplishes the time sensitive management control of command level asset visibility and cross leveling of critical items.¹¹ Units using manual processing or customers organized under a different SARSS-2A computer cannot view or receive issues until the requisition passes to a higher level supply source. So, if two corps arrive in theater with separate SARSS-2A computers, one corps cannot view or receive assets from the other. Units may download files from their resident corps SARSS-2A computer prior to deployment and connect to

the theater SARSS-2A computer once they arrive in theater. The disadvantage of this approach is the potential for temporary disruption while the transition is made.

The use of more than one corps-level SARSS-2A computer in theater leads to the second problem - parameter control. Unit unique parameters on the customer unit SARSS-1 computer are set by the SARSS-2A computer at the associated materiel management center (MMC).¹² Materiel managers at the MMC intervene when customers process requisitions out of tolerance with the system parameters selected. Each MMC selects parameters based on its local customer's requirements. For example, units with constrained fiscal resources may conduct mandatory screens for requisitions with a much lower dollar value than units with ample resources. Similarly, one MMC may consider a requisition quantity of 500 excessive, while another may not. MMCs may also select different parameters to manage stockage safety levels. Some MMCs will allow high priority requisitions from one unit to penetrate the safety level of another, while others will not due to readiness concerns. The parameters outlined above are established during peacetime to satisfy local requirements. Many of them, however, do not transition well to war.

Materiel managers can substantially reduce the amount of congestion at the APOE/APOD by setting parameters that maximize redistribution of assets in theater. Actions may include eliminating provisions for safety levels, allowing lower priority requisitions to penetrate losing unit supply systems, impose mandatory reviews for requisitions of lower dollar value and quantity, and maximize the number of units serviced by a single theater SARSS-2A computer. The Deputy Chief of Staff for Logistics (DCSLOG) imposed similar measures during the Persian Gulf War with good

results.¹³ Unfortunately, the DCSLOG did not issue a directive to standardize parameter controls until late December 1990.¹⁴ By that time, massive backlogs had already accumulated at the POEs and PODs.

While parameter controls could greatly improve command supply discipline, they also have drawbacks. First, parameter controls reduce the commander's flexibility. The commander is ultimately responsible for equipment readiness and knows what is required to achieve it. Restrictive parameter controls could result in unnecessary delays as more documents exit the system for managerial review. Second, parameter controls may improve service to higher FAD units at the expense of lower FAD units. Units organized at a higher FAD are authorized to use higher priorities. In the absence of safety levels, lower FAD units could issue a substantial portion of their authorized stockage to non-organic customers. This could result in degraded equipment readiness for units organized at a lower FAD. Third, disconnecting units from their habitually assigned SARSS-2A box could result in temporary disruptions as files are transferred

Summary

The current and emerging technologies described in this chapter may offer potential solutions to the priority abuse problem. The GTN may resolve strategic in-transit visibility problems, but the system's in-theater operational limitations may diminish its ability to resolve priority abuse. Parameter controls may resolve command supply discipline problems using existing technology, however, the controls may limit commander's flexibility, reduce readiness rates for lower FAD units, and temporarily disrupt supply activities as files are transferred to the theater computer.

Notes

¹ U.S. Army Command and General Staff College Student Text 101-9. *Joint and Combined Environment*. March 1994, p 442.

² Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. Undated, p 59.

³ U.S. Army Command and General Staff College. *Operational and Strategic Logistics*. Appendix 1 to Advance Sheet, Lesson2 In-Transit Visibility (ITV)/Global Transportation Network (GTN) Information.

⁴ U.S. Army Field Manual 10-1 Chapter 3. *Logistics Automation*.

⁵ USTRANSCOM GTN Program Management Office. *Web Page GTN Program Description*. p 3.

⁶ National Training Center Trends 4QFY94 to 2 QFY96. *Section II - Combat Service Support*. p 4.

⁷ Microsoft Encarta 1997 Encyclopedia/Dictionary.

⁸ Army Regulation 735-5, Policies and Procedures for Property Accountability, February 1994, p 4.

⁹ U.S. Army Information Systems Software Development Center Lee. *Standard Army Retail Supply System Users Manual*. April 1996, p 5-40.

¹⁰ U.S. Army Combined Arms Support Command. Logistics Automation Directorate System Support Booklet. *The Army's Combat Service Support Warfighting Role*. July 1992, p 35.

¹¹ Ibid.

¹² U.S. Army Information Systems Software Development Center Lee. *Standard Army Retail Supply System Users Manual*. April 1996, p 5-40.

¹³ Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*. Undated. p H-3.

¹⁴ Ibid, p 98.

Chapter 8

Summary, Conclusions, and Recommendations

The purpose of this study was to examine the impact of priority system abuse on theater airlift. The paper asserted that systemic priority abuse by U.S. Army customer units contributed substantially to materiel backlogs at the primary aerial ports of embarkation, caused misallocation of critical airlift assets, and needlessly delayed repair part shipments to supported customers. The information contained in the study illustrated the complexity of the requisition priority abuse problem. No solution, taken in isolation, appeared to completely resolve it.

The USACEAC report and accompanying literature review supported the assertion that priority system abuse was a significant problem during the Persian Gulf War. The supply system became stressed under the enormous demand placed upon it, as reflected by the increased high priority demands. The literature review disclosed a number of problems that contributed to the rise including lack of in-transit visibility, inadequate automation/communication architecture, and shortfalls in command supply discipline and fiscal constraint. These interrelated factors ultimately contributed to the increase in Order Ship Time.

The impact of priority system abuse was particularly evident at the aerial ports of embarkation, where the increased volume of air-eligible cargo resulted in extensive

backlogs. Since shippers could not establish a relative priority among the competing requisitions, cargo was processed on a first-come-first shipped basis.

During ODS/S, USTRANSCOM and USCENTCOM undertook a number of initiatives to curtail the rising backlogs and improve customer service. All three initiatives - supplementary logistics guidance; airlift allocation and diversion teams, and Desert Express treated symptoms to the problem instead of the underlying cause for the increase in air eligible cargo - requisition priority abuse at the customer unit level.

Current and emerging technologies may offer potential solutions to the problem. The GTN will resolve many strategic-level in-transit visibility problems and aid USTRANSCOM in meeting its charter for global transportation management. The GTN has operational limitations, however, that may diminish its ability to curb multiple requisitions for like-items and stem priority abuse. The system will not fully resolve problems associated with in-theater automation/communications architecture, which may limit its ability to address another primary cause for priority system abuse—command supply discipline.

Several initiatives are currently underway to resolve in-transit visibility, automation, and communications problems in theater. The “battlefield distribution” concept launched by the U.S. Army Combined Arms Support Command leverages a number of new technologies to improve CSS distribution functions. The combination of the automated manifest system (AMS), radio frequency automatic identification technology (RF AIT), Army total asset visibility (TAV), and in-transit visibility should significantly improve customer confidence compared to the Persian Gulf War. Eventually these technologies

will improve automation/communication architecture and fill the in-transit visibility gap from the POD to final destination.

Until the potential for these emerging technologies is realized, the use of parameter controls may offer an interim solution. Parameter controls stem priority system abuse at the customer unit level by enforcing proper command supply discipline procedures. The DCSLOG implemented parameter controls during the Persian Gulf War, but too late in the deployment to relieve the massive backlogs at the APOE/APOD. Parameter controls still have the potential to improve command supply discipline when implemented early. The controls provide appropriate focus at the customer unit level where priority abuse starts. Parameter controls also have potential disadvantages, however, which include limiting the commander's flexibility, reducing readiness rates for lower FAD units, and disrupting supply activities as files are transferred to a theater SARSS-2A box. Despite these risks, however, parameter controls remain a viable solution to the priority abuse problem.

Based on the information contained in the study, recommend GTN to improve in-transit visibility from APOE to APOD; continue development and fielding of improved automation/communication architectures to improve visibility in theater; and implement standard parameter controls to stem priority abuse at the customer unit level. These measures taken in concert should resolve the three main contributors to requisition priority abuse—lack of in-transit visibility, inadequate automation/communication architecture, and shortfalls in command supply discipline.

Glossary

ACA	Army Airlift Clearance Authorities
ALOC	Air Lines of Communication
ANMCS	Anticipated Not Mission Capable Supply
APOD	Aerial Port of Debarkation
APOE	Aerial Ports of Embarkation
ASL	Authorized Stockage List
AV	Aviation
AVSCOM	Army Aviation Systems Command
CENTCOM	U.S. Army Central Command
CONUS	Continental United States
COSCOM	Corps Support Command
CRAF	Civil Reserve Air Fleet
CSS	Combat Service Support
CTASC II	Corps/Theater Automated Data Processing Service Center-Phase II.
DAAS	Defense Automated Addressing System
DCSLOG	Deputy Chief of Staff for Logistics
DLSIE	Defense Logistics Studies Information Exchange
DMMC	Division Materiel Management Center
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Code
DSU	Direct Support Unit
DS4	Direct Support Unit Standard Supply System
EAC	Echelon Above Corps
FAD	Force Activity Designator
FSB	Forward Support Battalion
GAO	General Accounting Office
GTN	Global Transportation Network
JCS	Joint Chiefs of Staff
LCA	Logistics Control Activity
LIF	Logistics Intelligence File

MAC	Military Airlift Command
MILSTAMP	Military Standard Transportation and Movement Procedures
MMC	Materiel management Center
MP	Motor Pool
MSB	Main Support Battalion
NDI	Non-Developmental Item
NICP	National Inventory Control Point
NMCS	Not Mission Capable Supply
ODS/S	Operation Desert Shield/Desert Storm
OSC	Objective Supply Capability
OST	Order Ship Time
PLL	Prescribed Load List
PD	Priority Designator
POD	Port of Debarkation
RDD	Required Delivery Date
SAILS	Standard Army Intermediate Level Supply System
SAMS	Standard Army Maintenance System
SARSS-O	Standard Army Retail Supply System-Objective
SDD	Standard Delivery Date
STAMIS	Standard Army Management Information System
TAMMC	Theater Army Materiel Management Center
TAV	Total Asset Visibility
TP	Transportation Priority
ULLS	Unit Level Logistics System
UMMIPS	Uniform Materiel Movement and Issue Priority System
UND	Urgency of Need Designator
USACEAC	U.S. Army Cost and Economic Center
USTRANSCOM	U.S. Transportation Command

Bibliography

- Air University. *Air University Style Guide for Writers and Editors*, 1996, n.p. On-line. Internet, 4 November 1996. Available from <http://www.au.af.mil/au/rco/style/>.
- Basham, Terry D. and Eugenides, Jason G. *Desert Express: Framework for Institutionalization of Express Airlift Procedures*, Maxwell AFB, AL, Air University, Air Force Institute of Technology, September 1992.
- Battino, Eric P. *Receipt, Storage, and Issue of Class IX at Theater Level Under Rapid Deployment Conditions for Contingency Operations*, Fort Lee, VA, Florida Institute of Technology, April 1995.
- Bilyeu, Barbara. *An Analysis of the Causes of the Physical Distribution Problem the Army Experienced at the Ports of Embarkation During Operation Desert Shield/Desert Storm*, Fort Lee, VA, United States Army Logistics Management College, November 1992.
- Clagett, David C. *Logistics Support to Future Unified Commanders*, Carlisle Barracks, PA, U.S. Army War College, March 1993.
- Department of Defense Directive 4500.32R. *Military Standard Transportation and Movement Procedures (MILSTAMP)*, 1991.
- Ebertowski, James S. *Container Management Within the Total Distribution System - the Desert Storm Model*, Fort Lee, VA, U.S. Army Logistics Management College, April 1992.
- Gustafson, Greg R. *Logistics Management Systems in Desert Shield/Desert Storm How Well Did They Do?* Carlisle Barracks, PA, U.S. Army War College, April 1992.
- Headquarters, Department of the Army Pamphlet 710-2-1. *Using Unit Supply System*, February 1994.
- Joint Chiefs of Staff Publication 4-0. *Joint Doctrine for the Defense Transportation System*. June 1997.
- Mathews, James K. and Holt, Cora J. *So Many, So Much, So Far, So Fast*. Joint History Office, Office of the Chairman of the Joint Chiefs of Staff and Research Center United States Transportation Command.
- Menarchik, Douglas. *Powerlift - Getting to Desert Storm*, Praeger Publishers, West Port, CT, 1993.
- Microsoft Encarta 1997 Encyclopedia/Dictionary.
- Miller, Shane M. *A Study of U.S. Army Division Level Direct Support Repair Parts Supply Operations*, Fort Lee, VA, Logistics Executive Development Course, Army Logistics Management College, 1991.
- National Training Center Trends 4QFY94-2QFY96. Section II. *Combat Service Support*. Office of the Deputy Chief of Staff Logistics. *Operation Desert Storm Sustainment*, 1991.

- Stevenson, Mitchell H. *Desert Shield/Storm Logistics*, Carlisle Barracks, PA, U.S. Army War College, April 1993.
- U.S. Army Combined Arms Support Command. *Combat Service Support Master Plan*.
- U.S. Army Combined Arms Support Command. Logistics Automation Directorate System Support Booklet. *The Army's Combat Service Support Warfighting Role*, July 1992.
- U.S. Army Command and General Staff College Student Text 101-9. *Joint and Combined Environment*, Fort Leavenworth, KS, U.S. Government Printing Office, March 1994.
- U.S. Army Command and General Staff College. *Operational and Strategic Logistics*. Appendix 1 to Advance Sheet, Lesson 2, In-Transit Visibility (ITV)/Global Transportation Network (GTN) Information.
- U.S. Army Cost and Economic Analysis Center. *Supply Class IX Cost of Operations Desert Shield/Desert Storm*, February 1993.
- U.S. Army Cost and Economic Analysis Center Memorandum, Subject: *Report on Supply Class IX Costs of Operation Desert Shield/Storm*, Falls Church, VA, CALIBRE Systems, February 1993.
- U.S. Army Field Manual 10-1 Chapter 3. *Logistics Automation*.
- U.S. Army Information Systems Software Development Center Lee. *Standard Army Retail Supply System Users Manual*, Fort Lee, VA, April 1996.
- U.S. General Accounting Office. *Desert Shield/Storm Logistics Observations by U.S. Military Personnel*, Washington, D.C. ,November 1991.
- U.S. General Accounting Office. *Desert Shield/Storm Logistics U.S. Transportation Command's Support of Operation*, Washington, D.C. ,January 1992.
- U.S. Transportation Command *Global Transportation Network* Program Management Office. Web Page GTN Program Description.

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